

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A protein purified to apparent homogeneity comprising residues 63-452 of SEQ ID NO:2, wherein the protein lacks amino acid residues 1-45 of SEQ ID NO:2, and the protein exhibits  $\beta$ -secretase activity, and wherein the protein is expressed from a bacterial source.
- 2-14. (canceled)
15. (previously presented) The protein of claim 1, wherein said protein consists of SEQ ID NO: 43.
- 16-17. (canceled)
18. (previously presented) The protein of claim 1, wherein said protein has an N-terminal residue corresponding to a residue selected from the group consisting of residues 46, 58 and 63 of SEQ ID NO: 2 and a C-terminus selected from a residue between positions 452 and 501 of SEQ ID NO:2.
- 19-21. (canceled)
22. (previously presented) The protein of claim 1, wherein said protein is produced by a heterologous cell.
23. (previously presented) A crystalline protein composition formed from the protein of claim 1.
24. (previously presented) The crystalline protein composition of claim 23, wherein said purified protein is characterized by a binding affinity for the  $\beta$ -secretase inhibitor

substrate P10-P4'sta D→V which is at least 1/100 of an affinity exhibited by a protein having the amino acid sequence SEQ ID NO: 43, when said proteins are tested for binding to said substrate under the same conditions.

25. (previously presented) The crystalline protein composition of claim 23, wherein said composition is formed from a protein having a sequence selected from the group consisting of SEQ ID NO: 43, and SEQ ID NO: 71.

26-28. (canceled)

29. (cancel)

30. (cancel)

31. (original) The crystalline protein composition of claim 23, wherein said composition further includes a  $\beta$ -secretase substrate or inhibitor molecule.

32. (canceled)

33. (previously presented) The crystalline protein composition of claim 31, wherein said  $\beta$ -secretase inhibitor consists of the sequence SEQ ID NO: 72 [P10-P4'sta D->V].

34. (previously presented) The crystalline protein composition of claim 31, wherein said  $\beta$ -secretase inhibitor consists of the sequence SEQ ID NO: 81 [EVMXVAEF], wherein X is hydroxyethylene or statine.

35. (canceled)

36. (original) The crystalline protein composition of claim 31, wherein said  $\beta$ -secretase inhibitor is characterized by a  $K_i$  of no more than about 50  $\mu$ M.

37-131. (canceled)

132. (previously presented) The protein of claim 1, wherein the protein has been purified sufficiently to run as a single band on a SDS PAGE gel under reducing conditions.

133. (previously presented) The protein of claim 1, wherein the protein has been purified sufficiently to provide a suitable substrate for N-terminal amino acid determination.

134. (previously presented) The protein of claim 1, wherein the protein comprises SEQ ID NO: 58.